## Water Infrastructure Security Enhancement (WISE) Webcast Series

# Part I: The Importance of Security at Water & Wastewater Treatment Facilities – A Managerial Perspective

Tuesday, August 28, 2007 1:00-1:45 PM ET

#### **Today's Agenda and Speakers**

- Welcome and Introductions
   Adam Zabinski, WEF President-Elect
- Why Invest in Water Security and Resiliency?
   Greg Spraul, EPA Water Security Division
- Managerial Considerations for Optimizing
  Physical Security

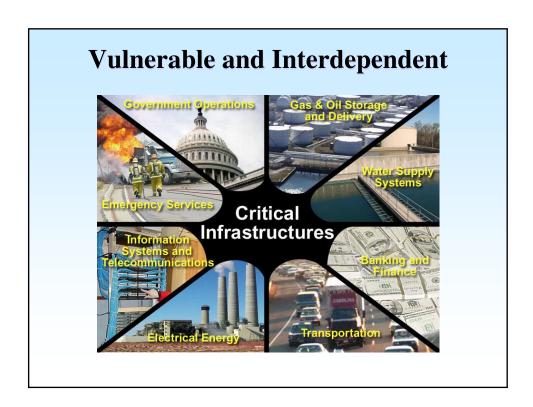
Adam Zabinski, WEF President-Elect

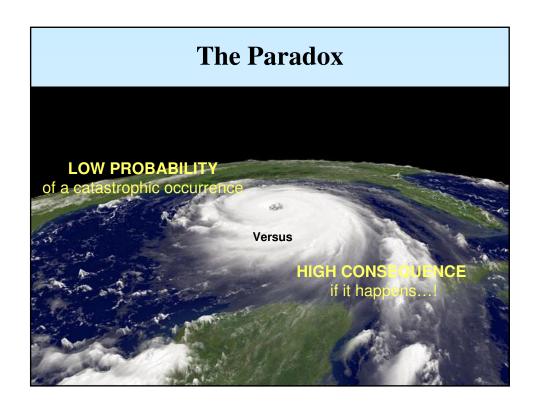
• Q&A

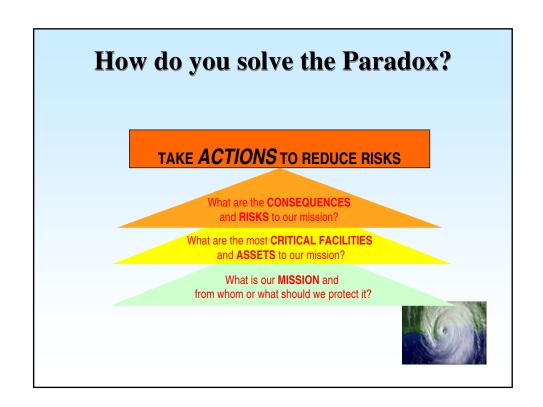
## Why Invest in Water Security and Resiliency?

Greg Spraul, EPA Water Security Division









#### **Be prepared** for the unexpected!!

Emergencies can have a devastating effect, whether they are:

- ·Malevolent,
- •Natural, or
- Accidental

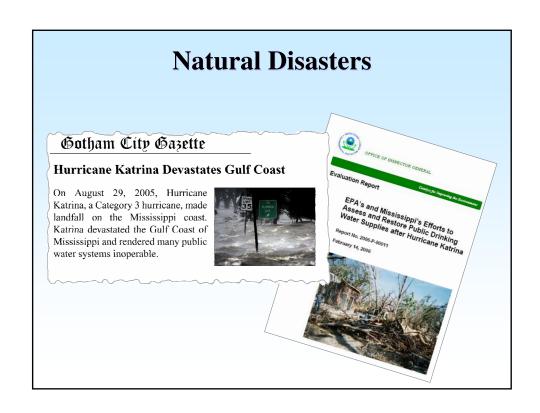


#### **Malevolent Attacks**

### Gotham City Gazette

Attempted Sabotage Of The Blackfoot Idaho Wastewater Treatment Plant, 2005 – FBI Investigating

Blackfoot looks into gas line tampering Blackfoot Chief of Police said the investigation of an incident last week at
the city's wastewater treatment center has heated up.





Chlorine Gas Leak In Graniteville, S.C, 2005

- 8 Killed, 220 Injured, and 5,400 Displaced From Homes



#### How can we reduce our risk?...

...by helping utilities prepare for the unexpected through the adoption of...

#### The features of an active and effective protective program

- 1. Integrate security and resiliency into the leadership and organizational culture
  - Seattle Case Study
- 2. Identify security and resiliency priorities, resources, and measure their effectiveness
  - Seattle Case Study

    Detact contemination
- Detect contamination
  - Water Security Initiative Guidance
- 4. Review and assess risks
  - VSAT software
- 5. Control access to facilities and information
  - WISE Standards and Product Guides
- 6. Incorporate security and resiliency concepts into physical infrastructure
  - WISE Standards and Product Guides
- 7. Review and exercise continuity of business plans
  - Tabletop Exercises CD-ROM
- 8. Partner with peers, law enforcement, and critical customers (e.g. hospitals)
  - Water/Wastewater Agency Response Networks (WARNs)
- 9. Be able to communicate internally and externally during an event
  - Example event messages
- 10. Be aware of threats and have threat level SOPs
  - Water Information Sharing and Analysis Center

#### **Water Infrastructure Security Enhancements**

#### Water Security Standards

#### **Foreword**

- 1. Application of Guidelines
- 2. Raw Water Facilities
- 3. Wells & Pumping Stations
- 4. Water Treatment Plants
- 5. Finished Water Storage Facilities
- 6. Distribution Systems
- 7. Water System Support Facilities

Appendices

#### WW/SW Security Standards

#### Foreword

- 1. Application of Guidelines
- 2. Wastewater Treatment Plants
- 3. Collection System
- 4. Pumping Stations
- 5. Wastewater System Support Facilities

#### **Appendices**



#### Resources to implement security

- Grant funding sources for water security
  - Email me for a Grant Matrix
- Other ideas include:
  - Integrating security into Asset Management
  - Integrating security into Training
  - Integrating security into rates





#### The Next BIG ONE?

Take your pick...

- Water Contamination
- Nationwide electrical grid failure
- Simultaneous events

- Earthquake
- Avian flu epidemic
- Dirty Bomb

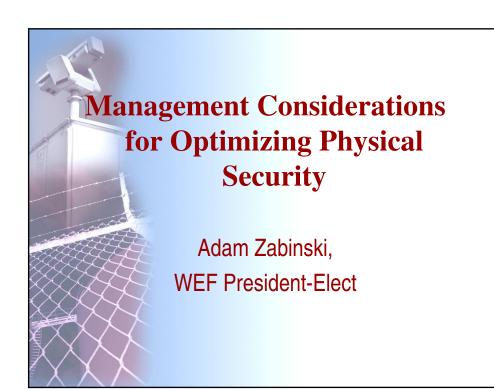


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#### Resources

- 1. Seattle Case Study
  - santora.marc@epa.gov
- 2. Water Security Initiative Guidance
  - epa.gov/watersecurity/initiative.cfm
- 3. VSAT software
  - http://www.vsatusers.net/
- 4. WISE Standards
  - · asce.org/wise
- 5. Security Product Guides
  - epa.gov/watersecurity/guide
- 6. Tabletop Exercises CD-ROM
  - epa.gov/watersecurity/trainingcd.cfm
- 7. Water/Wastewater Agency Response Networks (WARNs)
  - http://www.awwa.org/Advocacy/Govtaff/Documents/Utilities\_Helping\_Utilities.pdf
- 8. Example event messages
  - http://www.epa.gov/nhsrc/news/news040207.html
- 9. Water Information Sharing and Analysis Center
  - waterisac.org





#### **Management Responsibilities**

- Concepts and practices to facilitate improved security and reduce risks:
  - Inform the governing body and involve stakeholders
  - Address organizational culture and engage employees
  - Update policies and procedures
  - Mitigate employee, visitor, and contractor risks
  - Leverage financial resources
  - Manage sensitive records
  - Plan for procurement
  - Ensure effective communication and coordination
  - Secure information systems and other cyber networks

#### **Keep the Governing Body Informed**

- Ultimate responsibility to customers and citizens lies with the governing body
- May need to be convinced that the utility is indeed vulnerable
- Be cautious of revealing security details in public forums

#### **Information for the Governing Body**

- Federal and state requirements
- Real examples of failures
- Impacts on customers and employees
- Opportunity costs vs. cost of not implementing security
- Security measures can serve multiple purposes
- At what point should additional staff or outside experts be hired?



#### **Inform Stakeholders**

- · Build awareness of utility security issues
  - Why it's important
  - Security concepts and issues
  - Ways in which stakeholders can assist
- Gain the confidence & support of stakeholders
  - Customers
  - Reclaimed water users
  - Community organizations
  - Environmental advocates
  - Regulatory agencies
  - Elected officials



#### **Create a Culture of Security**

- Security as a topic in all staff meetings and internal newsletters
- Security officer or other responsible staff
- Security policies and procedures consistently and equitably enforced
- Employee emotions and family responsibilities
- Adequate security training for employees



#### **Provide Ongoing Training**

- Security
  - Security awareness
  - Media training
  - Equipment operation and maintenance
  - Coordination with law enforcement and other first responders
- Emergency response
  - Incident command system / NIMS
  - Table-top exercises
  - Full-scale functional exercises
  - Cross training

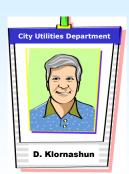
#### **Update Policies and Procedures**

- · Relatively quick to implement
- Low in cost
- Based upon the design basis threat
- Consider developing graduated procedures based upon threat condition
- Employee acceptance is the key to success
  - Educate about the need
  - Disseminate widely
  - Apply and enforce uniformly



#### **Mitigate Employee Risks**

- Means and methods to mitigate risks
  - Background checks
  - Photo identification badges
  - Surveillance
- Check with legal counsel first!
  - Bargaining unit agreements
  - Work rules and HR policies
  - Local, state, and federal law



#### **Reduce Visitor and Contractor Risks**

- Effective sign-in and sign-out procedure
- Visitor and contractor ID badges
- Limited access to sensitive areas
- Escorts and guards
- · Limited use of private vehicles on construction sites
- Background checks on contractor personnel
- Separate entrance and separate parking areas for construction staff
- · Construction site fenced off from rest of facility

#### **Leverage Financial Resources**

- Capital Improvement Plan (CIP) that adequately supports security funding requirements
- Funding programs to support operations and maintenance of security measures
- Adequate reserves
- Equitable and defensible funding and rate structures



#### **Ensure Balanced Financial Programs**

- Security improvements
- Operations and maintenance
- Rehabilitation and replacement
- Regulatory requirements
- System growth



#### **Properly Manage Records**

- Secure sensitive documents subject to FOIA
- Vulnerability assessments
- Details of security systems
- Security incident reports
- As-built plans and specs
- Personnel records
- Emergency response plans
- Store documents in locked metal file cabinets
- Keep minimal information on the Internet
- Include confidentiality statements on documents
- · Apply "clear-desk" and "clear-screen" policies
- Keep backups of records and data offsite

#### **Control Bid Documents**

- Prequalification of contractors
- Review of plans and specs in secure room
- Secure server with password access for authorized individuals
- Chain-of-custody protocols
- Confidentiality clause on all pages of documents

#### **Plan for Needed Procurement**

- Planned procurement
  - Consider using contractors that are already onsite
  - Purchase security-related equipment without public advertisement
  - Separate contracts
  - Consider alternative delivery systems
- Emergency procurement
  - Assure regulations allow for flexibility during emergencies
  - Establish on-call contracts with local and non-local vendors
  - Use cooperative purchasing agreements

#### **Improve Internal Communications**

- Provide personnel with a clear protocol for reporting security concerns
- Maintain up-to-date emergency contact lists for response to emergencies after-hours
- Hold employee meetings, post newsletters, and conduct workshops
- Consider formal team building and organizational development exercises

#### **Improve External Communications**

- Establish solid relationships with local emergency managers and first responders
- Involve staff from emergency agencies in utility emergency planning and exercises
- Share emergency contact lists
- Be part of the community and ask customers to be more aware
- Be ready with public notices and designated spokespersons
- Provide accurate information



#### **Coordinate with Other Agencies**

- Reach out to neighboring utilities for sharing of equipment, information, and other resources
- Initiate a dialogue with other utility providers to develop "priority customer" status
- · Consider agreements to
  - Interconnect systems if possible and practical
  - Allow treatment and solids processing at each other's facility
  - Borrow supplies, materials, labels, and equipment



#### **Establish Interlocal Agreements**

- Provide for mutual aid during times of crises
- Address utilization of resources to augment impacted or insufficient capabilities
- Identify responsibilities of the parties
- Establish procedures for reimbursements
- Assure legal authority for operating outside of service area
- Provide for indemnification of the parties

## Work, Plan, and Train with Local Emergency Agencies

- Conduct utility tours for local law enforcement and briefings on system threats and vulnerabilities
- Request police patrols past utility facilities and awareness of unauthorized access
- Give utility emergency contact information to all emergency response agencies
- Provide a list of all chemicals used and stored by the utility to first responders

#### **Summary**

- Manage with a keen focus on security
- Effective communications can facilitate planning, response, and recovery
- Include security in balanced financial programs and take advantage of available funding
- Update policies and procedures, protect sensitive records, and keep employees well trained
- Ensure cyber systems safe from external and internal intrusion

#### **For More Information**

- Wastewater Facilities: Experts' Views on How Federal Funds Should Be Spent to Improve Security, GAO-05-165, January 2005
- Legal Issues in the Time of Crises Checklist, NACWA, 2002
- Asset Based Vulnerability Checklist for Wastewater Utilities, NACWA, 2002
- Site Security Guidelines for the U.S. Chemical Industry, American Chemistry Council, the Synthetic Organic Chemical Manufacturers Association, and The Chlorine Institute, Inc., 2001





